CONTRACT NAS 9-4899

OCS BREADBOARD

OPERATOR'S HANDBOOK

MARTIN CR 66-8

APPROVED

E.C. Wood

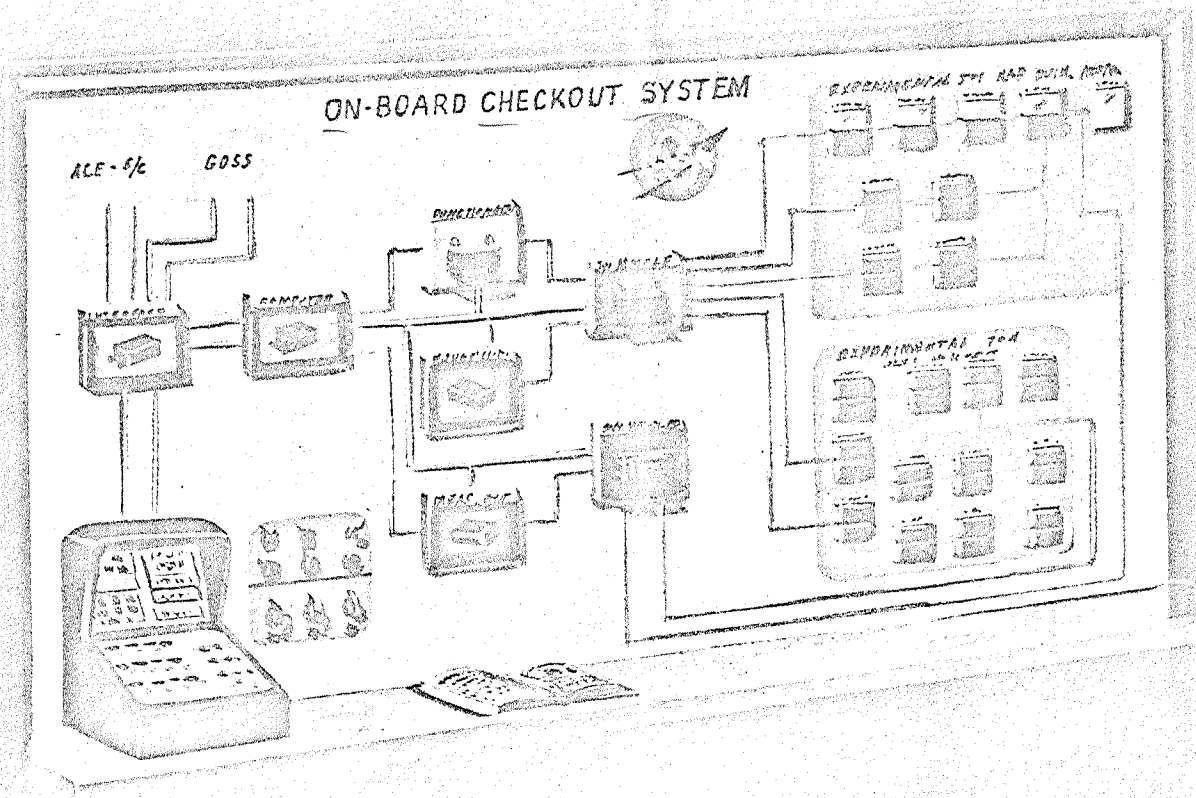
E.C. Wood, Program Manager

MARTIN COMPANY
DENVER, COLORADO

Aerospace Division of Martin-Marietta Corporation

FOREWORD

This document is submitted in accordance with the requirements of contract NAS 9-4899.



OCS BREADBOARD

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1. System Turn-On and Self Test

Press the POWER button. OCS Status indicators will then read: POWER ON and HIBERNATE. Next, place the computer in the RUN mode and press ALERT. Computer Self-Test and OCS Control and Transmission Test will be automatically run. If successful, a display test pattern will come on (See Item 2). If unsuccessful, OCS NO-GO will be displayed.

2. Display Test

The display test pattern is as follows:

a. OCS STATUS - 10 indications on, HIBERNATE and OCS NO-GO indications off.

b. TEST OPERATIONS - 9 indications on

c. MEASUREMENT UNITS - 8 indications on

d. PROGRAM OPERATIONS - 12 indications on

e. NUMERICAL DISPLAYS - all eights, decimal points between digits (17 places), 4 minus signs
Press RESP. COMPL. to clear display test pattern

3. ALERT/HIBERNATE

Pressing the ALERT/HIB button will cause the system to go from HIBERNATE to ALERT. Whenever 30 seconds elapse without a processing task, the system will automatically go to HIBERNATE. This is a standby condition in which no operation can be performed.

4. OPERATOR ACTION

The OPER. ACTION indication is always accompanied by a HANDBOOK REFERENCE display. The indicated handbook page and item will describe the required action. When the requested action has been completed, the RESP. COMPL. button must be pressed to clear the OPER. ACTION indication and allow the test program to continue.

OPERATOR ERRORS

Unreasonable operator inputs will be ignored by the system and will result in an OPER. ERROR indication. This will be accompanied by a handbook reference display (page 3 and OPERATOR ERROR TABLE item number containing description of the error detected). Press CLEAR OPER. ERROR to remove the OPER. ERROR indication.

OPERATOR ERROR TABLE

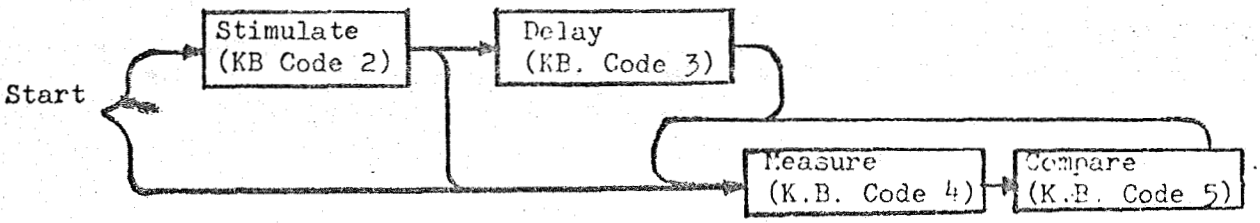
1. The requested test or monitor number is not contained in the test or monitor repertoire. See Test List, page 14, or Monitor List, page 17.

2. The selected test is inhibited. To permit selection of this test, the inhibit must be removed (see page 6, item 2).

3. An unassigned keyboard code has been entered.

4. Inhibit of a sequence of tests has been entered in reverse order. See page 6, item 1, for correct procedure.

5. An incorrect or out-of-sequence test element has been selected. Test elements must be entered in the order shown in the following diagram.



6. An incorrect stimulus signal point has been selected. See column SP of Test List, page 14 for correct signal point number.

7. An incorrect measurement signal point has been selected. See column MP of Test List, page 14, or Monitor Point column of Monitor List, page 17, for correct signal point number.

8. An incorrect stimulus magnitude has been entered. See Keyboard Entry Codes, page 10, for legal entries.

9. An incorrect stimulus frequency code has been entered. See Keyboard Entry Codes, page 10, for acceptable coding.

10. An unacceptable delay time has been entered. See Keyboard Entry Codes, page 10, for acceptable delay times.

11. An incorrect measurement type has been entered. See Keyboard Entry Codes, page 10, for legal entries of measurement type.

12. An incorrect measurement range has been entered. See Keyboard Entry Codes, page 10, for range codes and relationship of ranges to measurement type. Frequency and delay time measurements do not require entry of a range code.

13. An unacceptable test modification has been entered. Stimulus point or stimulus type can not be modified.

14. READ DATA has been pressed when not in the Program Review mode. See page 8, item 2 for proper operation for data readout.

15. ENTER DATA has been pressed when not in a Program Mode. See pages 7 and 8 for proper operation.

16. WRITE/REVIEW has been pressed when change in mode is not acceptable. See page 9 for acceptable operations.

1. Keyboard and Keyboard Entry Display

Pressing any KEYBOARD digit button will cause that digit to be displayed on the KEYBOARD ENTRY display. Digits enter this display from left to right. Entry of a fifth digit will cause the KEYBOARD ENTRY display to clear (this is the only manual means for clearing the KEYBOARD ENTRY). Decimal points must be entered in the order desired but the sign may be entered in any order. Units will be assumed depending on the nature and use of the entered data. Blanks remaining after entry of a number will be interpreted as zeros to the right of a decimal point.

2. Monitoring

Pressing MONITOR, when in ALERT and MONITOR OFF, causes MONITOR ON. A monitor cycle will occur immediately (upon test completion if a test is in progress). The system then returns to any interrupted operations. The MONITOR ON indication will remain on and monitor cycles will be repeated at two minute intervals. The system may be returned to MONITOR OFF (if ALERT) by again pressing the MONITOR button. Whenever a monitor cycle is in progress, the MONITOR IN PROGRESS indicator will be on.

3. Monitor Status Display

Any change in monitor status (from GO to NO-GO or from NO-GO to GO) will cause MON. INFO to be indicated. Pressing READ MON. INFO. will display the first detected status change. If additional status changes have been detected, the MON. INFO indication will remain on. Repeated pressing of READ MON. INFO will display these additional status changes until the MON. INFO light goes off. Failure to detect a measurement's prerequisites causes the measurement to be skipped or bypassed in the monitor cycle. This condition is indicated as a status change (BYPASS).

1. Automatic Checkout

Pressing CHECKOUT causes the test indicated by the NEXT TEST NUMBER to be run, followed by all succeeding tests in the checkout sequence (except those which have been inhibited) until a TEST STOP is reached, STOP TEST is pressed, or the last test in the checkout sequence is completed. The CHECKOUT indication will be on until any of these terminating actions occur. Detection of a test no-go will cause the checkout sequence to stop while the TEST NO-GO indication, the measured value and its limits, and a handbook reference are displayed. The CHECKOUT indication will remain on and the checkout sequence will continue upon pressing RESPONSE COMPLETE. In this case, the next test in the sequence will be the appropriate malfunction isolation test (if one is available).

2. Set-Up of Checkout Start and Stopping Points

Entering a test number on the keyboard and pressing START ON TEST will cause the entered test number to become the NEXT TEST NUMBER. Any number of checkout stopping points may be entered by entering test numbers on the keyboard and pressing STOP ON TEST after each entry. The checkout sequence will then stop automatically after completion of each of these tests. Current TEST STOPS should be recorded in the Handbook Test Stop Log for reference.

1. Test Inhibiting

Any test may be inhibited from being run (either by CHECKOUT or SINGLE TEST) by entering its number on the keyboard and pressing INHIBIT TEST. An entire group of tests in sequence may be inhibited by following the above operation with entry of the last test number in the group to be inhibited and pressing INHIBIT THRU. Any number of tests or groups of tests may be inhibited in this manner. These tests will then be automatically bypassed in any checkout sequence. Current TEST INHIBITS should be recorded in the Handbook Test Inhibit Log for reference.

2. Removal of Test Stops or Inhibits

To remove a TEST STOP or a TEST INHIBIT, enter the test number on the keyboard and press CLEAR STOP OR INHIBIT. Record such removals in the appropriate Handbook Logs to keep the logs updated.

3. Review of Test Inhibits

Repeated pressing of READ INHIBIT will cause display of the inhibited test numbers, one at a time, in the value display. The display will clear after the last inhibited test number has been read.

1. Single Tests

Pressing SINGLE TEST will cause only the test indicated by NEXT TEST NUMBER to be run. If a test other than the one indicated by NEXT TEST NUMBER is desired, enter the desired test number on the keyboard and press START ON TEST and SINGLE TEST in sequence.

2. Repeat Test

To repeat a previous test, press PRIOR TEST to decrement the NEXT TEST NUMBER, then press SINGLE TEST or CHECK-OUT, as desired.

3. Test Elements

Tests may be run an element at a time (such as stimulate, measure, compare, display) by entering the Test Element mode. This mode is entered by entering the digit 1 on the keyboard and pressing EXECUTE KEYBOARD CODE. The TEST ELEMENT status indicator will come on. Repetitive pressing of the SINGLE TEST button will then cause the elements of the test indicated by the NEXT TEST NUMBER display to be run one at a time in sequence.

1. Modification of Constants

The only stored constants of an existing test program that can be modified by the OCS operator are comparison limits. This is accomplished by following the procedure for data readout (see item 2) until the limit to be modified is displayed and then pressing WRITE/REVIEW. This will turn off the REVIEW indicator and turn on the WRITE indicator. Entering the desired new limit on the keyboard and pressing ENTER DATA will then cause the new limit to displace the original limit in the test program and in the display. The system will then return to the program review mode. To exit from this mode, press PROGRAM.

2. Data Readout

This operation allows the data stored for any test program (including codes for test element types, signal points, signal types, ranges, limits, etc.) to be read. It is accomplished by means of the Program Review mode, entered by pressing PROGRAM and WRITE/REVIEW. (the PROGRAM and REVIEW status indicators will come on). Next, enter the number of the test to be reviewed on the keyboard and press ENTER DATA. The first data of this test will then be displayed, along with Program Operations indications to describe the nature of the data. Subsequent repetitive pressing of READ DATA will cause sequential display of all data for this test. To exit from this mode, press PROGRAM.

1. Program Writing and Review

To write an original test program; press PROGRAM (the PROGRAM and WRITE status indicators will come on), enter the appropriate test element keyboard entry code (see page 11) and press ENTER DATA. A cue for the next data to be entered will be displayed in the Program Operations display. Follow the cues with appropriate keyboard entries and ENTER DATA. When all data for the selected element has been entered, the Program Operations display will clear. Subsequent test elements data is entered in the same manner. When all desired data has been entered, press PROGRAM to write "End of Test" and exit from the program mode. This test will be stored as test number 29.0.

When reviewing a test (see page 8, item 2), a copy of the test, as test number 39.0, is made automatically. The test copy may be modified to differ from the reviewed test by entering new data on the keyboard and pressing ENTER DATA instead of READ DATA at any time. This will cause the entered data, rather than the displayed data, to be used in the copy. The test being reviewed will not be affected. Stimulus Signal Point or Type cannot be modified. If Measurement Type is changed from Voltage to Frequency or Beacon, the system will go to the WRITE mode to accept a data entry for Range, returning to the REVIEW mode after this entry. When End of Test is reached, the system will go to the WRITE MODE to accept additional test elements. Pressing PROGRAM will write "End of Test" in test 29.0 and cause exit from the PROGRAM mode.

KEYBOARD ENTRY CODE

ITEM	ELEMENT LINK	SIG.PT,PG/ITEM NO., LIMITS	TYPE	MAGNITUDE,RANGE FREQUENCY	KEYBOARD ENTRY
1	DISPLAY				1
		2 DIGIT PG NO			NNXX DECIMAL
		2 DIGIT ITEM NO			NN DECIMAL
2	STIMULUS				2
		2 DIGIT SIG.PT.			NN DECIMAL
			SINE		1
				1-9VPP MAG.	N DECIMAL
				.1-.9KC FREQ	NX
				MULTIPLIER .01	1
				" 0.1	2
				" 1.0	4
				" 10	8
			DC CURRENT		2
				0-130 MA	NNN DECIMAL
			+5 VDC		3
			PLS.TRAIN		4
			28 VDC		5
3	DELAY				3
			00.01 SEC THRU 20.00 SEC		NN.NN DECIMAL
4	MEASURE				4
		2 DIGIT SIG PT			NN DECIMAL
			VOLTAGE		1
				RG1 0-.4VPK	0
				RG2 .4-1.6VPK	1
				RG3 1.6-6.4VPK	2
				RG4 6.4-28VPK	3
			FREQUENCY		2
			DELAY TIME		3
			BEACON		4
				ON TIME	1
				OFF TIME	0
5	COMPARE				5
		UPPER LIMIT			SEE NOTE
		LOWER LIMIT			SEE NOTE
		2 DIGIT PG.NO.			NN DECIMAL
		2 DIGIT ITEM NO.			NN DECIMAL
6	PREREQ.				6

NOTES: EXPRESS AS 4 SIGNIFICANT DIGITS WITH DECIMAL POINT AS FOLLOWS:

VOLTAGE RANGE 1 OR 2	N.NNN KBD ENTRY
VOLTAGE RANGE 3 OR 4	NN.NN KBD ENTRY
TIME IN SEC	NN.NN KBD ENTRY
FREQ IN KILOCYCLES	NN.NN KBD ENTRY

1 - SIMULATOR PANEL DESCRIPTION

The simulator panel provides the capability to select and insert into the simulator 22 selected malfunctions, and also provides the simulated subsystem controls the operator must manipulate when an action request is called for. In addition, a fast motion-slow motion switch is provided as well as an ACS Bypass switch that is used to provide a monitor prerequisite. Brief descriptions of these switches are given below:

A) DEMONSTRATION MODE SWITCH

FULL SPEED - ALLOWS THE OCS TO RUN AT FULL SPEED, WITH STOPS ONLY FOR OPERATOR ACTION OR WHEN A NO/GO IS DETECTED.

SLOW SPEED - WHEN IN THIS POSITION, A 5 SECOND DELAY IS AUTOMATICALLY PROGRAMMED AFTER EACH TEST COMPARE SO THAT THE DISPLAY BOARD LIGHT PATTERN CAN BE OBSERVED.

B) ATT. CONTROL SWITCH

ON - WHEN ON THIS SWITCH PROVIDES A PREREQUISITE SIGNAL SO THAT THE MONITOR POINTS IN TESTS 33.1, 33.2, 33.3, 33.4 and 33.5 WILL BE MONITORED.

OFF - WHEN OFF, THE PREREQUISITE SIGNAL IS REMOVED, AND TESTS 33.1, 33.2, 33.3, 33.4 AND 33.5 ARE BYPASSED IN THE MONITOR SEQUENCE.

C) BEACON SWITCH

ON - THIS TURNS THE RECOVERY BEACON ON SO THAT TEST 19.0 CAN BE PERFORMED.

OFF - THIS DISABLES THE RECOVERY BEACON.

D) EXP 501 MODE SWITCH (Tests 1.0-3.1)

OFF - TURNS EXP 501 OFF

A - SPECTROMETER MODE

B - TEK MODE

C - BF^3 COUNTER MODE

E) EXP 704 MODE SWITCH (Tests 4.0-5.1)

OFF - TURNS EXP 704 OFF

A - X-RAY SCINTILLATOR MODE

B - ANTI-COINCIDENCE SCINTILLATOR MODE

1 - SIMULATOR PANEL DESCRIPTION - (Continued)

F) ENABLE-DISABLE SWITCH

WHEN PLACED IN THE ENABLE POSITION, THIS SWITCH ENABLES PROGRAMMING OF WHATEVER MALFUNCTIONS ARE SELECTED BY THE 2 MALFUNCTION SELECT 12 POS. ROTARY SWITCHES. THIS SWITCH SHOULD BE TURNED ON ONLY AFTER THE MALFUNCTION SELECT SWITCHES HAVE BEEN POSITIONED.

G) MALFUNCTION SELECT - EXPERIMENTS

POS 1 - EXP 501, PULSE HT. ANALYZER MALF (TST 01.1)
POS 2 - EXP 501, COMMUTATOR MALF (TST 01.1)
POS 3 - EXP 501, SPECTROMETER MALF (TST 01.1)
POS 4 - EXP 501, TEK MALF (TST 02.1)
POS 5 - EXP 501, BF^3 COUNTER MALF (TST 03.1)
POS 6 - EXP 704, 2KV SUPPLY MALF (TST 30.1)
POS 7 - EXP 704, 25KV SUPPLY MALF (TST 30.2)
POS 8 - EXP 704, LOGIC GATE MALF (TST 04.1)
POS 9 - EXP 704, DISCRIMINATOR MALF (TST 04.1)
POS 10 - EXP 704, PREAMP MALF (TST 04.1)
POS 11 - EXP 704, ANTI-COINC. PREAMP MALF (TST 05.1)
POS 12 - OFF

H) MALFUNCTION SELECT - APOLLO SUBSYSTEMS

POS 1 - G&N ELECTRICAL PACKAGE MALF (TST 07.1)
POS 2 - G&N GYRO PACKAGE MALF (TST 07.1)
POS 3 - G&N BINARY SWITCH MALF (TST 08.1)
POS 4 - G&N INTERROGATOR MALF (TST 08.1)
POS 5 - PIPA MALF (TST 08.1)
POS 6 - PITCH RATE GYRO MALF (SCS) (TST 13.1)
POS 7 - YAW RATE GYRO MALF (SCS) (TST 14.1)
POS 8 - AUTOPILOT MALF (SCS) (TST 15.1)
POS 9 - AUTOPILOT MALF (SCS) (TST 16.1)
POS 10 - NOT USED
POS 11 - ELS T/D1, SYST A MALF (TST 24.0)
POS 12 - OFF

IN ADDITION, 2 SPARE TOGGLE SWITCHES AND ONE 3-POSITION ROTARY SWITCH ARE PROVIDED.

OPERATOR ACTION REQUESTS

ITEM	TEST NO.	OPERATOR ACTION
1	01.0	Exp. 501 Mode Sw. to A
2.	01.1	Exp 501 Mode Sw. to A
3	02.0	Exp 501 Mode Sw. to B
4	02.1	Exp 501 Mode Sw.to B
5	03.0	Exp 501 Mode Sw. to C
6	03.1	Exp 501 Mode Sw. to C
7	04.0	Exp 704 Mode Sw. to A
8	04.1	Exp 704 Mode Sw. to A
9	05.0	Exp 704 Mode Sw. to B
10	05.1	Exp 704 Mode Sw. to B
11	19.0	Recovery Beacon "ON"

OCS BREADBOARD TEST LIST

TEST NO.	NAME OF TEST	OPERATOR ACTION	SP	STIMULUS VALUE	MP	UPPER LIMIT	LOWER LIMIT	ITEM
01.0	EXP 501 SPECT E/E	SW POS A	00	5V 9KC	30	2.75VPK	2.25VPK	1
01.1	SPECT OUTPUT M/I	SW POS A	00	5V 9KC	33	1.25VPK	.75VPK	2
	COMMUTATOR M/I				32	1.65VPK	1.35VPK	3
	PULSE HT ANL M/I				31	2.25VPK	1.75VPK	4
02.0	EXP 501 TEK E/E	SW POS B	01	5V 3CPS	30	2.75VPK	2.25VPK	5
02.1	TEK OUTPUT M/I	SW POS B	01	5V 3CPS	34	1.25VPK	1.00VPK	6
03.0	EXP 501 BF CTR E/E	SW POS C	02	5V 20CPS	30	2.75VPK	2.25VPK	7
03.1	BF3 CTR OUTP M/I	SW POS C	02	5V 20CPS	35	1.15VPK	0.85VPK	8
04.0	EXP 704 X-RAY E/E	SW POS A	03	9V 9KC	36	5.0VPK	4.0VPK	9
04.1	PREAMP M/I	SW POS A	03	9V 9KC	39	4.5VPK	3.5VPK	10
	DISCRIM M/I				38	3.0VPK	2.6VPK	11
	LOGIC GATE M/I				37	2.5VPK	1.5VPK	12
05.0	EXP 704 ANTI-C E/E	SW POS B	04	4V 5KC	36	2.2VPK	1.8VPK	13
	PREAMP M/I	SW POS B	04	4V 5KC	40	1.12VPK	0.85VPK	14
06.0	EPS DC BUS E/E		05	28VDC	41	30VDC	24VDC	15
07.0	G+N STAB LOOP E/E		06	120MADC	42	14VDC	10VDC	16
07.1	ELECT PKG M/I		06	120MADC	43	6.7VDC	5.3VDC	17
	GYRO PKG M/I				44	3.6VDC	2.5VDC	18
08.0	G+N VEL LOOP E/E		07	90MADC	45	10VDC	8VDC	19
08.1	BINARY SW M/I		07	90MADC	46	5.2VDC	3.8VDC	20
	INTERROGATOR M/I				47	2.8VDC	1.8VDC	21
	PIPAM/I				48	1.6VDC	0.8VDC	22
09.0	SCS ATT CONT U E/E		08	5V 800C	49	2.8VPK	2.2VPK	23
					49	880CPS	720CPS	24

OCS BREADBOARD TEST LIST (Continued)

TEST NO.	NAME OF TEST	OPERATOR ACTION	SP	STIMULUS VALUE	MP	UPPER LIMIT	LOWER LIMIT	ITEM
10.0	SCS ATT CONT D E/E		08	5V 800C	49	2.8VPK	2.2VPK	1
11.0	SCS ATT CONT R E/E		09	3V 800C	50	1.6VPK	1.4VPK	2
					50	880CPS	720CPS	3
12.0	SCS ATT CONT L E/E		09	2V 800C	50	1.15VPK	0.85VPK	4
13.0	SCS ATT RATE U E/E		10	10MADC	51	1.2VDC	0.8VDC	5
13.1	SCS ATT RATE U M/I		10	10MADC	52	0.6VDC	0.4VDC	6
14.0	SCS ATT RATE R E/E		11	5MADC	53	0.6VDC	0.4VDC	7
14.1	SCS ATT RATE R M/I		11	5MADC	54	0.35VDC	0.15VDC	8
15.0	SCS TVC PU E/E		12	3V 800C	55	1.6VPK	1.4VPK	9
15.1	SCS TVC PU M/I		12	3V 800C	56	0.9VPK	0.6VPK	10
16.0	SCS TVC YL E/E		13	1V 800C	57	0.6VPK	0.4VPK	11
16.1	SCS TVC YL M/I		13	1V 800C	58	0.27VPK	0.15VPK	12
17.0	PROP VALVE POS E/E		14	6VDC	59	8VDC	4VDC	13
18.0	C+D AUDIO CNTR TST		15	3V 400C	60	1.6VPK	1.4VPK	14
					60	460CPS	340CPS	15
19.0	C+D RECOV BCN TEST	RB SW ON			61	2.6S ON	1.4S ON	16
					61	3.7S OFF	2.3S OFF	17
20.0	C+D PMP TEST 1		16	3V 4KC	62	4.4KC	3.6KC	18
21.0	C+D PMP TEST 2		17	4V 2KC	63	2.2KC	1.8KC	19
22.0	C+D PMP TEST 3		18	5V 6KC	64	6.6KC	5.4KC	20
23.0	C+D PMP TEST 4		19	7V 8KC	65	8.8KC	7.2KC	21
24.0	ELS T/D 1 SYS A		20	28VDC	66	2.4SEC	1.6SEC	22
25.0	ELS T/D 3 SYS B		21	28VDC	67	15.5SEC	12.5SEC	23

CHECKOUT LOG

TEST NO.	TEST STOP LOG	TEST INHIBIT LOG	TEST CHANGE LOG	TEST NO-GO LOG
1.0				
1.1				
2.0				
2.1				
3.0				
3.1				
4.0				
4.1				
5.0				
5.1				
6.0				
7.0				
7.1				
8.0				
8.1				
9.0				
10.0				
11.0				
12.0				
13.0				
13.1				
14.0				
14.1				
15.0				
15.1				
16.0				
16.1				
17.0				
18.0				
19.0				
20.0				
21.0				
22.0				
23.0				
24.0				
25.0				

OCS BREADBOARD MONITOR LIST

MON. NO.	NAME OF MONITOR	MON PT.	TYPE	MAGNI-TUDE	R UPPER LIMIT	LOWER LIMIT	ITEM
30.1	EXP 704 2KV PWR SUPPLY	24	VOLTAGE		4 30VDC	25VDC	1
30.2	EXP 704 25KV PWR SUP	25	VOLTAGE		4 30VDC	25VDC	2
31.1	EPS BUS A BATT I DISC	26	VOLTAGE		1 50MVDC	0V	3
31.2	EPS AC BUS 1 FREQ + PH	27	FREQ	0.4 KC	0.460 KC	0.340 KC	4
31.3	EPS FUEL CELL TEMP	28	VOLTAGE		1 180MVDC	120MVDC	5
31.4	EPS H2 PURGE VALVE	29	VOLTAGE		4 22VDC	18VDC	6
31.5	EPS AC BUS 1 VOLTAGE	68	VOLTAGE		3 6VPK	4VPK	7
31.6	EPS O2 TANK PRESS	69	VOLTAGE		3 8VDC	4VDC	8
31.7	EPS O2 TANK TEMP	70	VOLTAGE		1 150MV	60MV	9
32.1	G+N PWR COND VOLT	71	VOLTAGE		3.3.5VPK	2.5VPK	10
32.2	G&N PWR COND FREQ	71	FREQ	0.4 KC	0.460 KC	0.340 KC	11
32.3	G+N PWR COND VOLT	72	VOLTAGE		2 1.2VPK	0.8VPK	12
32.4	G&N PWR COND FREQ	72	FREQ	6.4 KC	7.4 KC	5.4 KC	13
33.1	SCS HE TANK PRESSURE	73	VOLTAGE		3 8VDC	4VDC	14
33.2	SCS PROP PRESSURE	74	VOLTAGE		4 9.6VDC	6.4VDC	15
33.3	SCS PROP TEMP	75	VOLTAGE		4 9VDC	6VDC	16
33.4	SCS N2 PRESSURE	76	VOLTAGE		4 2.5VDC	1.5VDC	17
33.5	SCS CHMBR THROAT TEMP	77	VOLTAGE		4 30VDC	12VDC	18
34.1	C+D PWR SUPPLY	78	VOLTAGE		3.5.9VDC	4.1VDC	19
34.2	C+D PWR	79	VOLTAGE		4 11.5VDC	8.5VDC	20

NOTES: SIG PT 22 IS A SPARE TEST STIM OR MON PT

SIG PT 23 IS MON SIMULATION GRND

MONITOR LOG

TEST NO.	TEST CHANGE LOG	TEST NO-GO LOG
30.1		
30.2		
31.1		
31.2		
31.3		
31.4		
31.5		
31.6		
31.7		
32.1		
32.2		
32.3		
32.4		
33.1		
33.2		
33.3		
33.4		
33.5		
34.1		
34.2		